

## Catalogue of American Amphibians and Reptiles.

MINTON, SHERMAN A. 1983. *Sistrurus catenatus*.

***Sistrurus catenatus* (Rafinesque)  
Massasauga**

*Crotalinus catenatus* Rafinesque, 1818:41. Type-locality, "Prairies of the Upper Missouri." No holotype designated.

*Sistrurus catenatus* Garman, 1883:118.

• CONTENT. Three subspecies, *catenatus*, *edwardsii*, and *tergeminus* are recognized.

• DEFINITION. Massasaugas are small to medium-size rattlesnakes (40–100 cm total length) with 9 symmetrical crown shields, short tails (7 to 12 percent of total length), and well developed rattles. Upper preocular usually in contact with postnasal; supralabials number 10–14; infralabials 10–15. Dorsal scales keeled except for lowest one or two rows, in 23 or 25 rows at midbody. Color pattern typically is seven rows of alternating dark blotches, those of median row largest and most conspicuous; tail with alternating pale and dark bands.

• DESCRIPTIONS. Stejneger (1895) recognized and described the three subspecies. Gloyd (1940) gave the first description based on a large number of specimens from all parts of the then-known range and later (Gloyd, 1955) reviewed material from the western part of the range and redefined the subspecies *edwardsii*. Brattstrom (1964) described significant features of osteology. Zimmerman and Kilpatrick (1973) described chromosomes. Bailey (1942) described a presumed hybrid between *S. c. catenatus* and *Crotalus horridus*.

• ILLUSTRATIONS. Gloyd (1940) provided black and white photographs of blotched and melanistic individuals and illustrated hemipenis, head scales, and tail. Black and white photographs of all subspecies appear in Klauber (1972) and Glenn and Straight (1982). Color illustrations are in Behler and King (1979) and other field guides.

• DISTRIBUTION. Massasaugas occur mostly in disjunct populations from west central New York and Pennsylvania to the Georgian Bay region of Ontario thence west across the central states to extreme southeastern Minnesota, southeastern Colorado, southeastern Arizona, and the Gulf Coast of Texas. Apparently disjunct Mexican populations occur in the Cuatro Ciénegas Basin, Coahuila and near Aramberri, Nuevo Leon. Most of the range is at elevations below 1500 m. Habitats vary from tobosa grassland in the southwest to bogs and marshes in the northeast with a general preference for damp grassland. Drainage and farming, particularly in the northeast and midwest, have exterminated many populations.

• FOSSIL RECORD. Fossils of *Sistrurus catenatus* have been reported from Upper Pliocene and Pleistocene (Yarmouth) deposits of Kansas (Brattstrom, 1967; Holman, 1972).

• PERTINENT LITERATURE. Wright (1941) described habitat and life history of a population in northern Illinois. Greene and Oliver (1965) reported observations on the species in Texas and Kansas. Reinert and Kodrich (1982) reported on seasonal movements and habitat preference. Maple and Orr (1968) studied overwintering. Keenlyne and Beer (1973a, 1973b) gave data on broods and food preference. Chiszar et al. (1976a) described courtship behavior and (1976b, 1981) investigated feeding stimuli. Carpenter and Gillingham (1975) described defenses against attack by king snakes. Minton (1956, 1957), Bonilla et al. (1971), Foote and MacMahon (1977), Elliot (1978), and Glenn and Straight (1982) provide information on toxicity, antigens and biochemistry of the venom. Information on massasauga bites is in Lyon and Bishop (1936), Jaffe (1957), Parrish (1964), and Poticha (1971).

• ETYMOLOGY. The name *catenatus* is Latin meaning chained or chain-like and refers to the central row of blotches. The name *tergeminus* is Latin meaning threefold or triple and probably refers to the triple row of prominent spots seen in many western specimens. The patronym *edwardsii* honors L. A. Edwards, a U.S. Army surgeon who collected the type specimen. The name

*massasauga* from the Chippewa Indian language means "great river-mouth" and evidently alludes to the marshy habitat of the snake in the Great Lakes region.

**1. *Sistrurus catenatus catenatus* (Rafinesque)**

*Crotalinus catenatus* Rafinesque, 1818:41. See species account. *Crotalus messasaugus* Kirtland, 1838:190. Type-locality "Ohio." No holotype designated.

*Crotalophorus kirtlandi* Holbrook, 1842:31. Type-locality "Ohio and Michigan." Syntypes, Acad. Natur. Sci. Philadelphia 7238–39, 16662 (not examined by author).

*Crotalophorus massasauga* Baird, 1854:12.

*Sistrurus catenatus* Garman, 1883:118.

*Crotalophorus catenatus catenatus* Cope, 1892:685.

*Sistrurus catenatus catenatus* Cope, 1900:1146.

• DEFINITION. Scale rows at midbody usually number 25, ventrals 129–151, caudals in males 24–33, females 20–29. Blotches in median series number 21–40; belly mostly black or dark gray. Total length of average adults 55–80 cm.

**2. *Sistrurus catenatus tergeminus* (Say)**

*Crotalus tergeminus* Say, 1823: 499. Type-locality indefinite; restricted to Winfield, Cowley County, Kansas (Smith and Taylor, 1950). No holotype designated.

*Crotalophorus consors* Baird and Girard, 1853:12. Type-locality "Indianola" (Texas). Holotype United States Nat. Mus. 512, presumed lost.

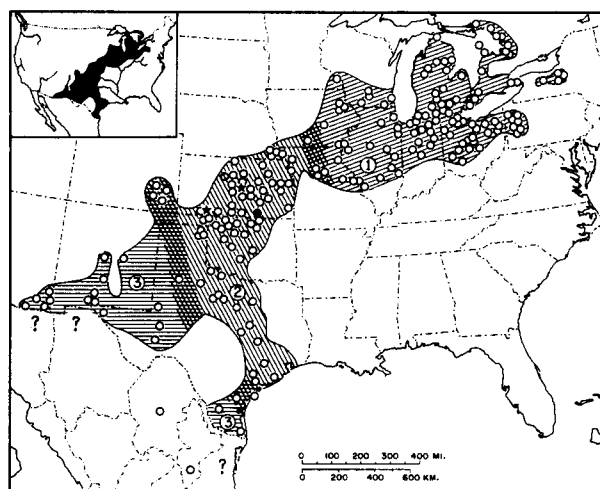
*Crotalus miliarius* var. *tergeminus* Jan, 1859:153 (part).

*Caudisona tergemina* Cope, 1875:34 (part).

*Sistrurus catenatus* var. *consors* Garman, 1883:176.

*Sistrurus catenatus tergeminus* Klauber, 1936:6.

• DEFINITION. Scale rows at midbody usually number 25, ventrals 138–160, caudals in males 27–34, females 21–28. Blotches in median series number 33–49; belly white or cream with dark lateral blotches. Total length of average adults is 46–66 cm.



MAP. Solid circle indicates restricted type-locality of *S. c. tergeminus*; other type-localities are too indefinite to plot. Hollow circles indicate other records; stars mark Pliocene and Pleistocene fossil localities. Overlapping patterns delimit zones of intergradation. Mexican populations cannot yet be assigned to subspecies.

### 3. *Sistrurus catenatus edwardsii* (Baird and Girard)

*Crotalophorus Edwardsii* Baird and Girard, 1853:15. Type-locality, "Tamaulipas" (Mexico). Holotype, United States Nat. Mus. 507, presumed lost; cotypes 506 "Sonora, Mexico" and 509 "Tamaulipas, Mexico."  
*Crotalus miliarius* var. *Edwardsii* Jan, 1863:124.  
*Crotalus Edwardsii* Cope, 1875:34.  
*Sistrurus miliarius* var. *edwardsii* Garman, 1883:177.  
*Crotalophorus catenatus edwardsii* Cope, 1892:685.  
*Sistrurus catenatus edwardsii* Stejneger, 1895:416.

• DEFINITION. Usually 23 scale rows at midbody, ventrals 137–152, caudals in males 28–36, females 24–29. Blotches in median series number 27–41; belly white or cream, unmarked or with sparse dark flecks. Total length rarely exceeds 55 cm.

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